Dual

CS 506

Bedienungsanleitung
Notice d'emploi
Operating instructions
Gebruiksaanwijzing
Instrucciones de manejo
Bruksanvisning
Istruzioni per l'uso

ENGLISH

Unpacking and setting up

After opening the box place aside the polystyrene insert with the complete accessories. Remove the console with the inserted record player from the box and put the unit in the place intended for it. First of all read the instructions slips on the unit and then remove these afterwards with the packing films. We recommend you keep the original packaging in case you need this later on for further transport.

To release the transport locking screws (Fig. 1) turn these in clockwise direction until they slide down approximately 15 mm and then tighten these by turning them further in clockwise direction. In this way, the record player is spring mounted in playing position (Fig. B).

A B C

Remove the tonearm counterbalance from the polystyrene insert amd place the stem of the counterbalance, after releasing the locking screw **(3)**, into the opening intended for this at the back end of the tonearm. At the same time, the triangular recess on the stem should point downwards (Fig. 2). Balancing as well as setting of stylus pressure and anti-skating which is now necessary are described in more detail on pages 14 and 15.

Please refer to the separate data sheet for the stylus pressure of the cartridge already inserted in the unit.

Now connect to the reproducing amplifier and place the mains lead into the socket. Please pay attention to the separate information in these instructions.

Subsequent transport

Make sure that the tonearm is locked and that the stylus protection is swivelled downwards. In addition, the transport locking screws must be loosened in anti-clockwise direction, pulled upwards and secured by further turning (Fig. C). The tonearm counterbalance should be removed.

If you intend to dispatch your unit, make sure that the packaging is impeccable and, if possible, use the original packaging.

Connection to the ac mains

The unit can be operated on alternating current, 50 or 60 Hz, 110/125 or 220/240 V. At the factory, 50 Hz units are set for 230 V; 60 Hz units, for 115 V.

Conversion of the mains voltage should only be carried out by your specialist dealer or by an authorized Dual service station.

Connection to the amplifier

The cartridge lead of your HiFi turntable is equipped at the works with RCA (cynch) jacks.

So that your receiver or reproducing amplifier be designed for DIN jacks, have your specialist dealer adapt this by replacing the complete cartridge lead.
Cartrige lead with DIN jack 1.10 m long.
Order number 207 303.
Dual cartridge leads can also be equipped for plug-in into the turntable.
Please do not forget to connect the chassis lines of the right hand (green) and left hand (blue) tonearm lines to the chassis of the unit when converting this from cynch (RCA) to DIN jacks.
An equalized-amplifier is necessary if your stereo amplifier or receiver has no direct input for magnetic cartridge systems. In this case, we recommend the Dual TVV 47 which is equipped with plug-in connections.

Dust cover

In order to place the dust cover in position, turn the unit round so that the special hinges are in front of you and are easily accessible. First of all make sure that the insert brackets on the hinges, into which the cover will be placed, are in correct position before you place the dust cover in position parallel to the brackets and push this in fully.
In this position (opening angle approx. 60°) the cover can also be removed at all times.
Should it be necessary to correct the balancing moment (elastic force which keeps the cover above the console), this can be carried out by turning both knurled screws. Please adjust both screws equally. In most cases, correction by half a screw turn each will be sufficient.

Setting up and operation

Select platter speed, 33 1/3 or 45 rpm, then unlock tonearm, move stylus tip protector upwards.
Now remove tonearm from post and swing it over the record. After the tonearm has been swung over the record the turntable platter automatically starts to rotate. When the tonearm is lifted from its post and placed beside the tonearm rest, the platter will rotate. The record on the platter can be cleaned (with an antistatic cloth etc.) when the tonearm is in this position.
In order to lower the tonearm to a specific position of the record only a light touch of the guide lever **(6)** will do.
The cueing lift now operates and the diamond is placed carefully on the record.
At the end of the record, the tonearm lifts off the record and the cue-control lever returns to the ▼ position. The motor then switches off automatically. It is recommended to lock the tonearm and to flap down the stylus protection after play.

Interrupting play (Pause)

Set the cueing lever to position ▼ . When the cueing lever is returned to position ▼ , playing is continued. The last few notes before the pause are repeated.

Technical information

Cartridge and stylus

Please refer to the "Information on your unit's cartridge", enclosed with these instructions for use.

Installation of a cartridge with 1/2" standard attachment (see page 27)

Depending on the unit type purchased, the assembly accessories for 1/2" cartridges can consist of special accessories which do not form part of the unit's standard equipment. The tonearm of your Dual HiFi turntable is designed for HiFi magnetic cartridges with an intrisic weight of 4.5 to 10 g including attachment material and 1/2" standard attachment. Should you wish to install a different cartridge, proceed as follows:

1. If necessary, remove the locking screw (Fig. 4/s).
2. Remove the cartridge by turning the attachment screw **(10)** in anticlockwise direction. At the same time, hold the cartridge as otherwise it will drop from the mount (Fig. 5). Remove the tonearm lines from the contact pins of the cartridge.
3. Attach the 1/2" cartridge to the mounting plate with the aid of the system installation gauge and using the accessories enclosed with the cartridge. This has been correctly installed if the tape of the stylus – viewed from above – is in the V-shape recess of the system installation gauge. Viewed from the side, the stylus must be in the area of the rectangular recess (Fig. 7).
4. Connect the connections of the tonearm head to the connecting pins on the cartridge. The connections are colour-coded:

Red	R	right hand channel
Green	RG	right hand channel earth
Blue	GL	left hand channel earth
White	L	left hand channel

5. Place the mounting plate with the mounted cartridge onto the tonearm head and – by turning the attachment screw **(10)** in clockwise direction – secure this.
6. Unscrew the plastic cover on the rear of the tonearm counterweight and screw on the additional mass enclosed with the accessories.
7. Now once again carefully balance the tonearm – as described in the section on "balancing the tonearm".

After having mounted a 1/2 inch cartridge check the height of the playing needle above the record with the pick-up arm lift in position ▼ also check that the needle lowers into the run-in groove of the record. See part "Cueing control" (page 15).

Stylus

The stylus is subjected to natural wear and tear during normal playing. Therefore, we recommend you occasionally check the stylus and, in the case of diamond styli, this should be carried out after approximately 300 playing hours. Your specialist dealer will be pleased to do this for you free of charge. Worn or damaged (splintered) styli chisel the modulation from the grooves and destroy records. Therefore, only use as replacement the stylus types recommended in the technical data of the cartridge. Copied styli result in audible quality losses and increased wear and tear of records. Please remember that, for physical reasons, the stylus holder with the diamond stylus is extremely fine and must therefore be necessarily sensitive to impacts, shocks or uncontrolled movement. To have the stylus tested by a trade dealer, you only need to remove the stylus as described in the following paragraph.

Stylus anti-theft lock

The stylus is safeguarded against unauthorised removal by means of a grub screw on the left hand side beside the system attachment screw **(10)** on the cartridge mount (Fig. 4/S). If you wish to remove the stylus, unscrew its grub screw and swivel the tonearm grip **(9)** backwards. You can now pull out the stylus to the front at a slight inclination.

Balancing the tonearm

Precise tonearm balancing is important, above all for cartridges with a low stylus pressure. The tonearm need only be balanced once. However, it is recommended to check the tonearm balance from time to time.
The tonearm is balanced if it remains in a horizontal position when suspended freely and if it returns to this horizontal position if pushed upwards or downwards.
Shifting the counterbalance **(2)** on its shaft balances the tonearm coarsely; turning the knurled ring of the counterbalance weight balances the tonearm exactly.

1. Set the tracking force **(4)** and anti-skating **(5)** controls to "zero" (with the pointer L/H).
2. Unlock the tonearm and move it over the tonearm rest. Place the cue-control lever **(6)** in ▼ position.
3. If the tonearm does not return to a horizontal position on its own, release the locking screw **(3)** and shift the counterbalance with the stem until you have an approximate balance. The stem of the counterbalance should then be locked by tightening the locking screw.
4. Now find the exact balance by turning the knurled ring of the counterweight.
5. Set the stylus pressure and anti-skating.

Setting stylus pressure

Each cartridge requires a certain stylus pressure with which optimum reproduction is obtained. You will find this specification for the fitted cartridge on the enclosed data sheet.
If the tonearm has been exactly balanced, the stylus pressure necessary for the cartridge is set by turning the stylus pressure scale **(4)**. The stylus pressure can be continuously set within the range from 0 to 30 mN (0 · 3 g), whereby the digits on the scale represent the following.

1 = 10 mN ≙ 1 g
2 = 20 mN ≙ 2 g
3 = 30 mN ≙ 3 g

A graduation mark in the range from 2 · 15 mN is analogous to this (0.2 · 1.5 g) 1 mN (0.1 g).
The unit works reliably from a stylus pressure of 5 mN (0.5 g) onwards.

Anti-skating

The skating force acting upon each tonearm leads to one-sided wear and tear of the stylus and record and can cause distorted reproduction.
In order to balance out the skating force, a counterforce exactly defined with regards to size and direction must be applied. The anti-skating device **(5)** of your HiFi record player fulfills this requirement.
For stylus types usual or standardized nowadays, separate setting scales are available in accordance with the printed symbols:

○ Setting for spherical styli.

⬭ Setting for biradial (elliptical) styli.

Adjustment of the anti-skating device should be carried out synchronously to setting of the stylus pressure: turn the anti-skating device to the digit of the scale concerned, which corresponds to the adjusted stylus pressure. For example, in the case of 15 mN (1.5 g) stylus pressure also place the anti-skating rotary button in position "1.5".
The skating force is reduced by approximately 30 % in the case of 25 mN (2.5 g) stylus pressure also place the anti-skating rotary button in position "2,5".

Cue Control

Your unit is equipped with a shock-free cue control silicone-damped in both directions.
Thus the tonearm can be lowered to any desired point on the record more gently than is possible by hand. The cue-control lever **(6)** has two positions:

⧗ tonearm raised

⧖ tonearm on record

The cue control holds the tonearm above the record, and it can therefore be moved to any position over the record with complete safety. A light touch on the cue-control lever **(6)** to the ⧖ position lowers the tonearm gently. The cue-control returns to the ⧗ position automatically at the end of the record. With the cueing control in ⧗ position, the height of the stylus above the record can be varied by approximately 6 mm by turning the adjusting screw **(1)**.

Pitch control

Each of the two standard speeds (33 1/3 and 45 rpm) can be varied with the pitch control. Adjustment is made with pitch control knob **(13)** (Fig. 3). Adjustment range at 33 1/3 rpm approx. 1 semitone (6 %).
The pitch control maintains the nominal speed and provides for individual control of tempi and pitch of reproduction, for example, when the pitch of recorded music is to match a live musical instrument, or when a record passage is to match the length of a motion picture scene.
The set speed can be checked with the aid of the illuminated stroboscope on the outside edge of the platter. Despite the rotation of the platter, the stroboscope markings for the desired speed seem to stand still when the actual speed of the platter is the same as the set speed.

Removing platter

The platter is secured to the chassis by a clip which engages the platter shaft. To remove the platter, lift the mat over one of the openings and turn it so the opening is at the left. Then free the screw seen in the opening and press it outward. The platter can then be lifted off.
To secure the platter, press the screw inward and tighten again.

Changing drive belt

Lift the platter mat on a recess of a platter and rotate this section to the range of the drive pulley of motor.
Remove the belt from the motor pulley and let it remain in position around the inner rim of the platter. Now release the platter and remove it (as described below).
Remove the old belt and place the new one on the inner rim of the platter.
Attention! Be sure the textured (ground) side of the belt is on the inside. Then replace the platter on the chassis and secure it before.
Remove the flat belt with a cardboard strip, if necessary, and put it on the motor drive pulley. Make sure that the flat belt runs freely within the guide fork.

50 or 60 Hz Line Frequency

Conversion to a different power line frequency is accomplished by exchanging the motor drive pulley.
60 Hz AC current is generally supplied in overseas countries. Ask your dealer, if necessary.

Service

All the lubrication points have sufficient oil. Thus, your unit will operate impeccably for many years under normal conditions. Never try to lubricate any of the lubrication points yourself. If your record player should ever need servicing, either take it to your specialist dealer or ask him for the address of the next authorized Dual Servicing Workshop. Please make sure that only original Dual replacement parts are used.
Should the unit ever be dispatched, make sure that this is packed perfactly, if possible, by using the original packaging.

Electrical safety

The unit complies with the International Safety Regulations for radio and related devices (IEC 65).

Technical data

Measured values = typical values.
Rumble and wow and flutter values obtained with test record.

Current AC 50 or 60 Hz, changeable by changing motor pulley
Line Voltage 110 – 125 V or 220 – 240 V, changeable
Drive Dual 8-pole synchronous motor: precision flat belt for flywheel drive
Power consumption approx. 10 watts
Starting Time (to each nominal speed) approx. 2 seconds at 33 1/3 rpm
Power Consumption at 220 V, 50 Hz: approx. 75 mA
at 117 V, 60 Hz: approx. 140 mA
Platter Non-magnetic, detachable, 1.1 kg, 304 mm ϕ
Platter speeds 33 1/3 and 45 rpm
Pitch Control Variation at both platter speeds
Adjustment range at 33 1/3 rpm approx. 1 semitone (6 %)
Speed control (monitoring) with stroboscope for platter speeds 33 1/3 and 45 rpm, adjustable to 50 or 60 Hz.
Sensitivity of the strobe for 0.1 % speed deviation
6 division markings per minute at 50 Hz,
7,2 division markings per minute at 60 Hz.
Total Wow and Flutter

DIN	± 0.07 %
WRMS	± 0.04 %

Rumble
(according to DIN 45 500)

Unweighted	48 dB
Weighted	70 dB

Tonearm Torsion-resistant tubular aluminum tonearm in four-point gimbal bearing
Effective Length of Tonearm 221 mm
Offset Angle 24° 4'
Tangential Tracking Error 0.16°/cm

Tonearm Bearing Friction (related to stylus tip)
vertical 0.07 mN (0.007 g)
Stylus Pressure from 0 - 30 mN (0 - 3 g) infinitely variable with 1 mN (1/10 g) calibrations from 0 - 15 mN (0 - 1.5 g) operable from 5 mN (0.5 g) stylus pressure up
Cartridges with 1/2 inch screw-type attachment. These can be fitted with the special accessories no. 262 186 which can be obtained from trade dealers. Adjustable overhang 5 mm.
Cartridge See separate data sheet

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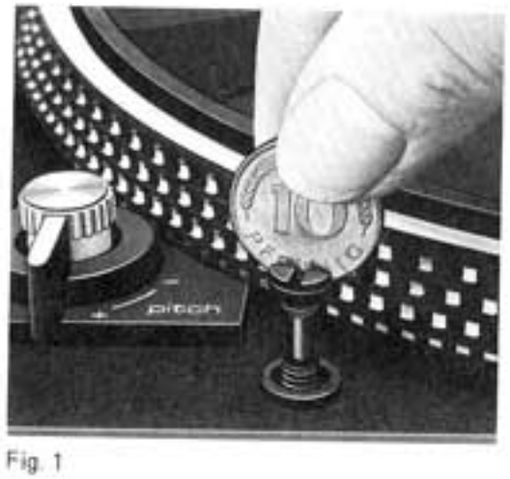

Fig. 1

Fig. 2

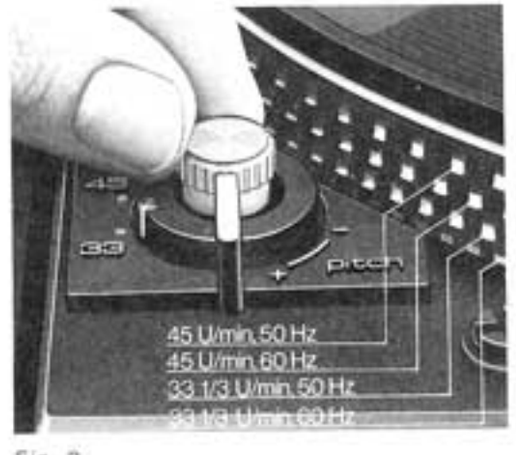

Fig. 3

Operation

(1) Alignment screw for tonearm height
(2) Tonearm counterbalance
(3) Locking screw for tonearm counterbalance
(4) Stylus pressure setting
(5) Anti-skating setting
(6) Cueing control
(7) Tonearm post with tonearm rest
(8) Illuminated stroboscope
(9) Tonearm lift
Stylus lock
(10) Cartridge attachment screw
(11) Centering spindle
(12) Transport locking screw
(13) Pitch control
(14) Platter speed setting

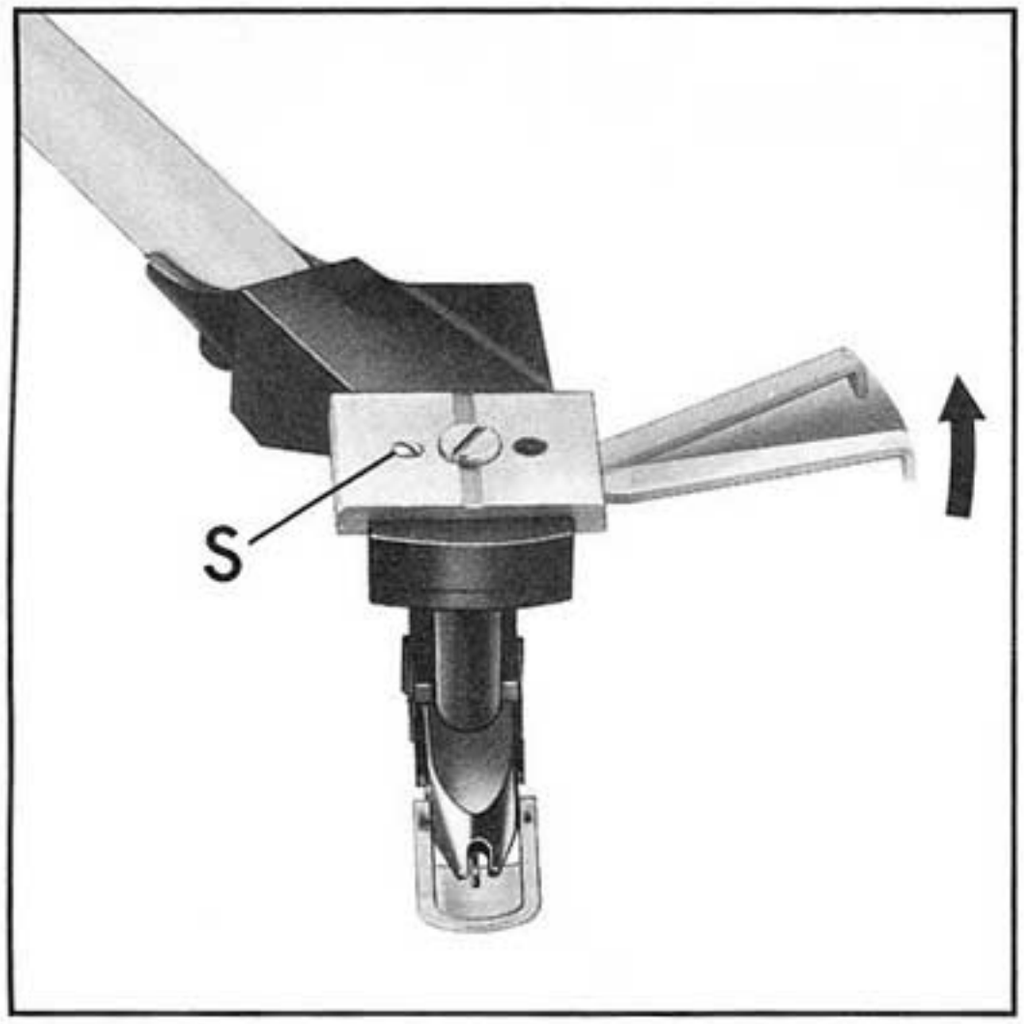

Fig. 4

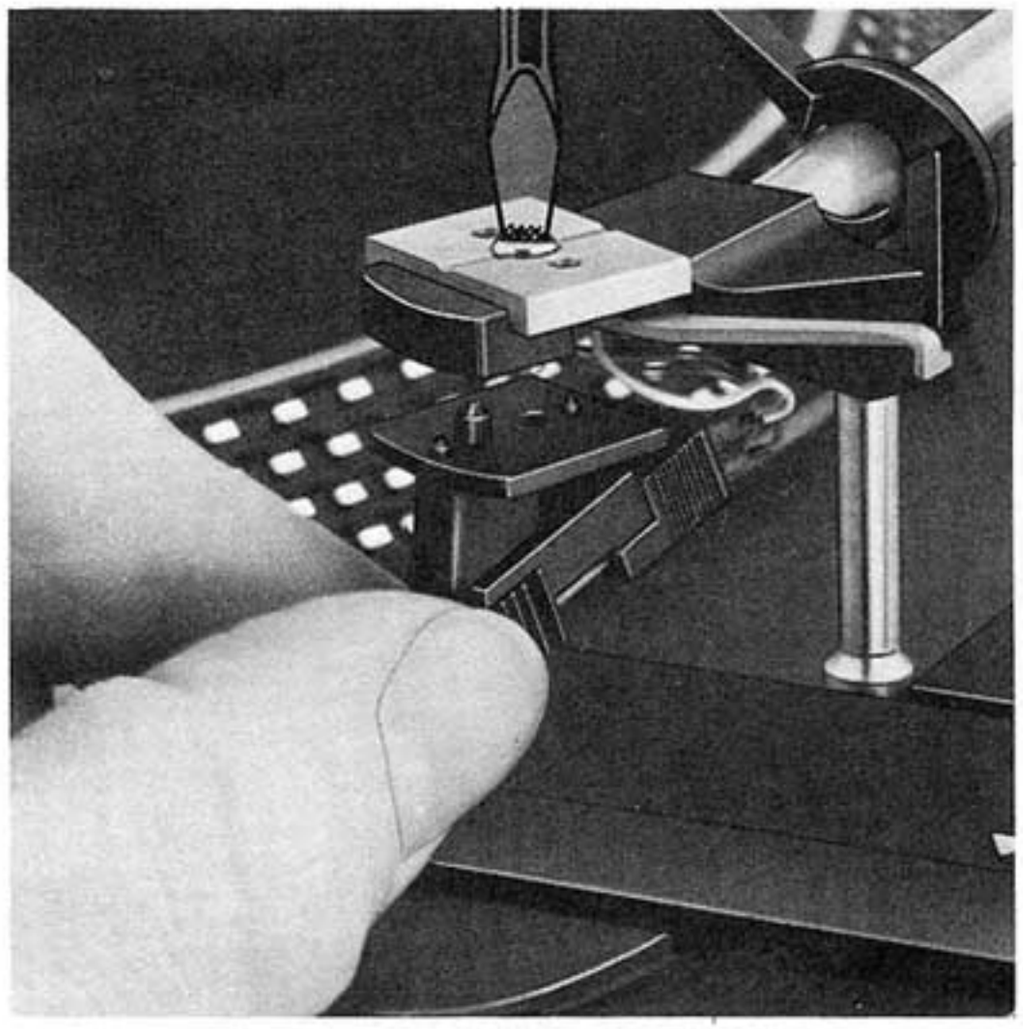

Fig. 5

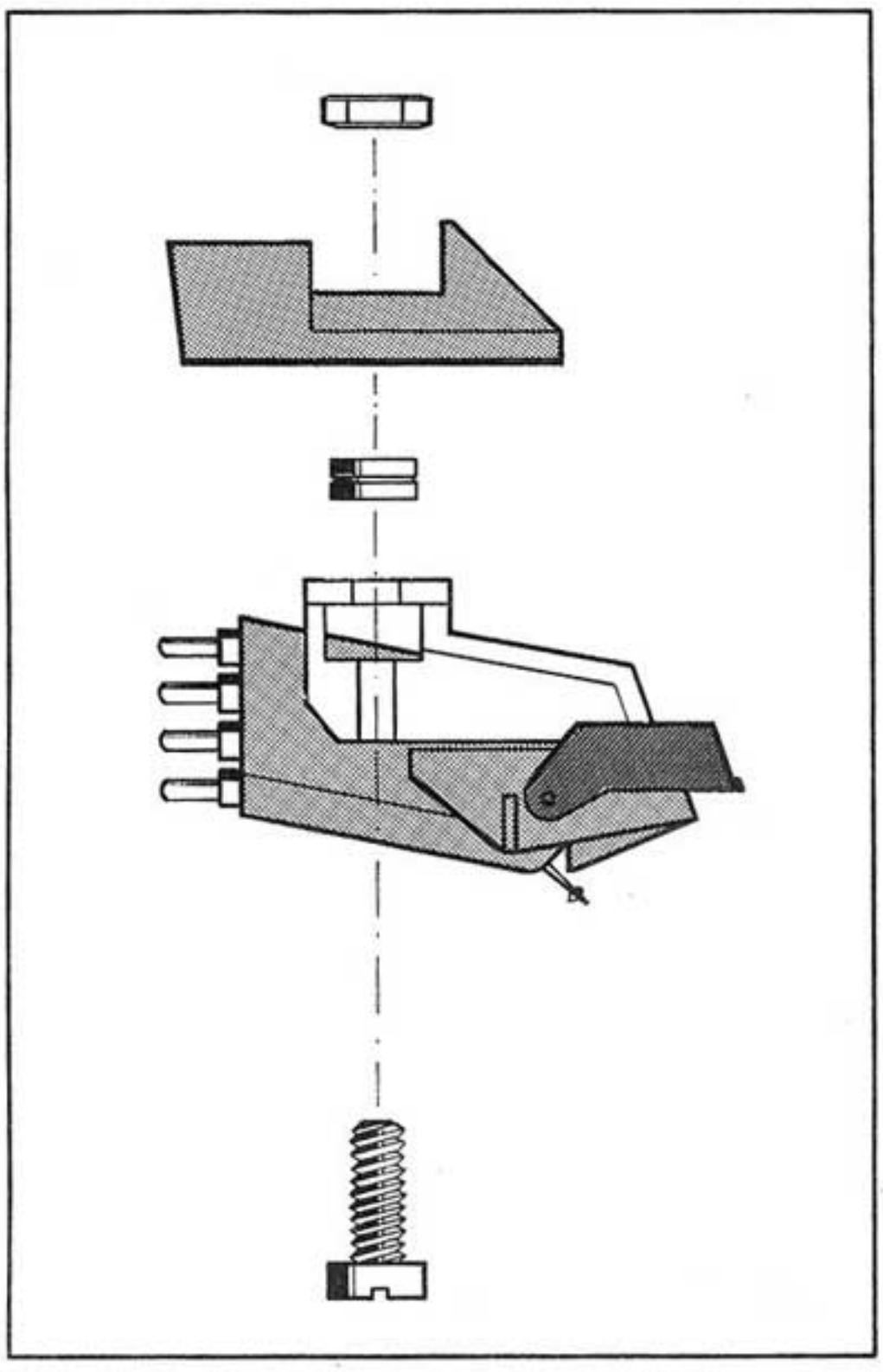

Fig. 6

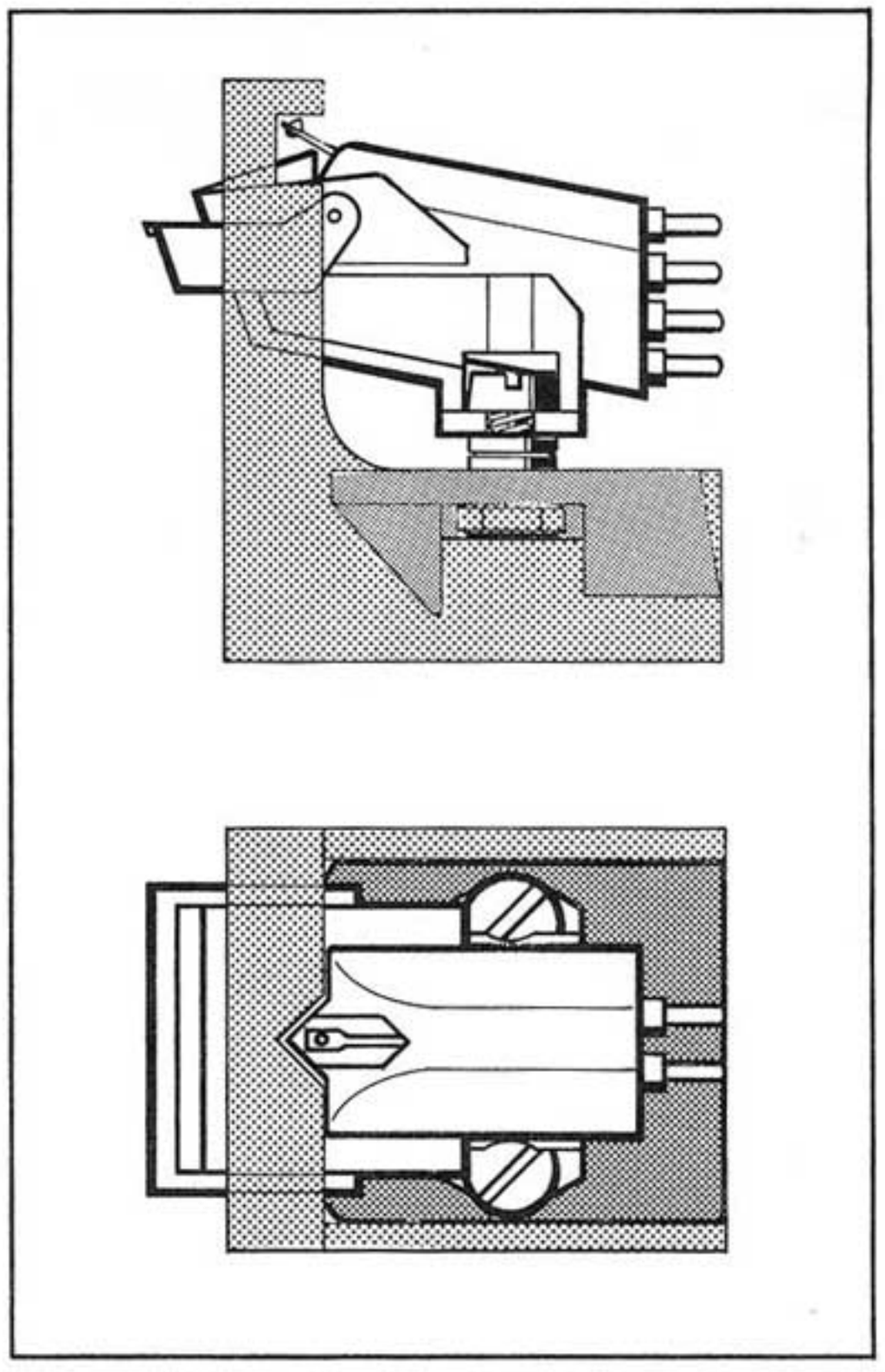

Fig. 7